WTCI-582-P

THE PORT AUTHORITY OF [illegible]

Memorandum

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WORLD TRADE OPERATIONS
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To: Frank Boyce, Asbestos Project Coordinator, World Trade Center
From: Harry R. Pool, Jr.
Date: July 23, 1986
Subject: ASBESTOS BULK SAMPLING - TWO WORLD TRADE CENTER - 7th and 8th FLOORS - MECHANICAL EQUIPMENT ROOM
Reference: Memo; H. Pool to F. Boyce, 5/29/86, same subject
Copy To: N. Budeiri, R. Fagin, M.D., G. Maas, P. Maurer, D. Montalbano, E. Monteverde, V. Strom

As you requested, samples of possible asbestos containing insulation were obtained from the 7th and 8th floors Mechanical Equipment Room (MER) of Two World Trade Center. Collected samples were analyzed following the United States Environmental Protection Agency procedure 600/M4-82-020. In this area, a total of 114 samples were collected and analyzed for asbestos. Of this total, 55 samples were identified as containing asbestos. At a majority of sampling sites, split samples were collected using one sample number for identification. The exterior most layer (E) appears to have been used as a type of encapsulating membrane surfacing the insulation material applied to the structural members and metal deck ceiling (I). This exterior membrane has a different appearance and texture. Based upon visual differences, samples were collected by attempting to split and separate the exterior layer (E) from the interior layer (I). Microscopic analysis disclosed the fact that the exterior surface contains asbestos while the interior surface does not. As will be seen from the results, if any asbestos is present in the interior sample submitted it is because of uneven sample splitting (the percent asbestos will be lower from the exterior layer). The following indicates positive asbestos locations:

Sample No.	Location	Results
2WTC-1107	Cottony insulation material on structural beam above 13,800 volt room	5% Chrysotile Asbestos
2WTC-1108	Cottony insulation material on truss above 13,800 volt room	5% Chrysotile Asbestos
2WTC-1139	Cottony insulation material on structural beam above E7.21	5% Chrysotile Asbestos
2WTC-1142	Cottony insulation material on column above E7.21	5% Chrysotile Asbestos
2WTC-1143	Cottony insulation material on metal deck above E7.21	5% Chrysotile Asbestos
2WTC-1144	Cottony insulation material on structural beam above E7.21	10% Chrysotile Asbestos

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Sample No.	Location	Result
ZATC-1216(E)	Cottony insulation material on structural beam above E7.21	20% Chrysotile Asbestos
ZATC-1216(I)	Cottony insulation material on structural beam above E7.21	1% Chrysotile Asbestos
ZATC-1217(E)	Cottony insulation material on truss above E7.21	20% Chrysotile Asbestos
ZATC-1217(I)	Same location	1% Chrysotile Asbestos
ZATC-1218(E)	Cottony insulation material on metal deck above cold water pipe above E7.21	20% Chrysotile Asbestos
ZATC-1218(I)	Same location	1% Chrysotile Asbestos
ZATC-1219(E)	Fluffy insulation material on structural beam above air duct above E7.21	80% Chrysotile Asbestos
ZATC-1219(I)	Same location	1% Chrysotile Asbestos
ZATC-1220(E)	Fluffy insulation material on metal deck above air duct above E7.21	30% Chrysotile Asbestos
ZATC-1220(I)	Same location	1% Chrysotile Asbestos
ZATC-1221(E)	Fluffy insulation material on structural beam above air duct above E7.21	15% Chrysotile Asbestos
ZATC-1221(I)	Same location	1% Chrysotile Asbestos
ZATC-1222(E)	Fluffy insulation material on metal deck above air duct above E7.21	40% Chrysotile Asbestos
ZATC-1222(I)	Same location	5% Chrysotile Asbestos
ZATC-1223	Cementitious insulation material on structural beam above E.721 air duct	Non-asbestos
ZATC-1224	Fluffy fallout insulation material on top of E.721 air duct	30% Chrysotile Asbestos

Sample No.	Location	Result
2WTC-1225	Fluffy fallout insulation material on top of E.721 air duct	1% Chrysotile Asbestos
2WTC-1226	Fluffy fallout insulation material on top of air duct above E.721	30% Chrysotile Asbestos
2WTC-1227	Fluffy fallout insulation material on top of elevator duct above E.721	5% Chrysotile Asbestos
2WTC-1228	Fluffy insulation material sprayed on structural beam, exposed in plenum of 19th floor elevator lobby	5% Chrysotile Asbestos
2WTC-1229(E)	Fluffy insulation material on structural beam above ACS 7-8 S.E.	30% Chrysotile Asbestos
2WTC-1229(I)	Same location	3% Chrysotile Asbestos
2WTC-1230(E)	Fluffy insulation material on metal deck above ACS 7-8 S.E.	50% Chrysotile Asbestos
2WTC-1230(I)	Same location	Non-asbestos
2WTC-1231(E)	Fluffy insulation material on joint above ACS 7.11 N.W.	50% Chrysotile Asbestos
2WTC-1231(I)	Same location	10% Chrysotile Asbestos
2WTC-1232(E)	Fluffy insulation material on structural beam above ACS 7.11 N.W.	40% Chrysotile Asbestos
2WTC-1232(I)	Same location	3% Chrysotile Asbestos
2WTC-1233(E)	Fluffy insulation material on metal deck above ACS 7.11 N.W.	15% Chrysotile Asbestos
2WTC-1233(I)	Same location	40% Chrysotile Asbestos
2WTC-1234(E)	Fluffy insulation material on structural beam above ACR 7.10	60% Chrysotile Asbestos
2WTC-1234(I)	Same location	1% Chrysotile Asbestos
2WTC-1235(E)	Fluffy insulation material on metal deck above ACR 7.10	50% Chrysotile Asbestos

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Sample No.	Location	Result
[illegible]TC-1235(I)	Same location	3% Chrysotile Asbestos
[illegible]TC-1236	Cementitious molded insulation material on heat transfer pipe above ACR 7.10	20% Amosite Asbestos
[illegible]TC-1237(E)	Fluffy insulation material on metal deck above ACR 7.10	50% Chrysotile Asbestos
[illegible]TC-1237(I)	Same location	Non-asbestos
[illegible]TC-1238(E)	Fluffy insulation material on structural beam in ACR 7 S.E. room	40% Chrysotile Asbestos
[illegible]TC-1238(I)	Same location	3% Chrysotile Asbestos
[illegible]TC-1239(E)	Fluffy insulation material on structural beam in ACR 7.5 S.E. room	30% Chrysotile Asbestos
[illegible]TC-1239(I)	Same location	10% Chrysotile Asbestos
[illegible]TC-1240	Cementitious patch insulation material on structural beam in ACR 7 S.E. room	3% Chrysotile Asbestos
[illegible]TC-1241(E)	Fluffy insulation material on column in ACR 7 S.E. room	Non-asbestos
[illegible]TC-1241(I)	Same location	Non-asbestos
[illegible]TC-1242(E)	Fluffy insulation material on structural beam above ACS 7.13 B	60% Chrysotile Asbestos
[illegible]TC-1242(I)	Same location	10% Chrysotile Asbestos
[illegible]TC-1243(E)	Fluffy insulation material on metal deck above ACS 7.13 B	50% Chrysotile Asbestos
[illegible]TC-1243(I)	Same location	3% Chrysotile Asbestos
[illegible]TC-1245(E)	Fluffy insulation material on metal deck above ACS 7.13 B	40% Chrysotile Asbestos
[illegible]TC-1245(I)	Same location	1% Chrysotile Asbestos
[illegible]TC-1247(E)	Fluffy insulation material on structural beam above ACS 7.13 B	15% Chrysotile Asbestos

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Sample No.	Location	Result
2WTC-1247(I)	Same location	Non-asbestos
2WTC-1251(E)	Fluffy insulation material on joist above ACS 7.9	30% Chrysotile Asbestos
2WTC-1251(I)	Same location	Non-asbestos
2WTC-1252(E)	Fluffy insulation material on structural beam above ACS 7.9	45% Chrysotile Asbestos
2WTC-1252(I)	Same location	5% Chrysotile Asbestos
2WTC-1253(E)	Fluffy insulation material on metal deck above ACS 7.9	40% Chrysotile Amosite-Trace Asbestos
2WTC-1253(I)	Same location	1% Chrysotile Asbestos
2WTC-1254(E)	Fluffy insulation material on metal deck above ACS 7.9	20% Chrysotile Asbestos
2WTC-1255	Fluffy insulation material on structural beam above ACS 7.9	3% Chrysotile Asbestos
2WTC-1256(E)	Fluffy insulation material on column of east electric sub-station	1% Chrysotile Asbestos
2WTC-1256(I)	Same location	Non-asbestos
2WTC-1257(E)	Fluffy insulation material on column of east electric sub-station	1% Chrysotile Asbestos
2WTC-1257(I)	Same location	Non-asbestos
2WTC-1262(E)	Fluffy insulation on metal deck in ACR 7 S.W. 9.24 FL	20% Chrysotile Asbestos
2WTC-1262(I)	Same location	1% Chrysotile Asbestos
2WTC-1263(E)	Fluffy cementitious insulation material on beam in ACR 7 W.E. 9.24 FL	30% Chrysotile Asbestos
2WTC-1263(I)	Same location	40% Chrysotile Asbestos
2WTC-1264	Fluffy cementitious insulation material on steam transfer pipe from ACR 7 S.W. 9.24 FL	1% Chrysotile 40% Amosite Asbestos

Sample No.	Location	Result
2WTC-1265(E)	Fluffy insulation material on structral beam exposed in ACR 7 N.W. 3 and 4	20% Chrysotile Asbestos
2WTC-1265(I)	Same location	1% Chrysotile Asbestos
2WTC-1267	Air-cell insulation material on steam transfer pipe in ACR 7 N.W. 3 and 4	60% Amosite Asbestos
2WTC-1269(E)	Fluffy insulation material on metal deck above ACS 7.14 lobby	60% Chrysotile Asbestos
2WTC-1269(I)	Same location	5% Chrysotile Asbestos
2WTC-1270(E)	Fluffy insulation material on structural beam above ACS 7.14 lobby duct	50% Chrysotile Asbestos
2WTC-1270(I)	Same location	20% Chrysotile Asbestos
2WTC-1271(E)	Fluffy insulation material on metal deck above ACS 7.14 lobby duct	15% Chrysotile Asbestos
2WTC-1271(I)	Same location	1% Chrysotile Asbestos
2WTC-1272(E)	Fluffy insulation material on structural beam above ACS 7.14 lobby duct	30% Chrysotile Asbestos
2WTC-1272(I)	Same location	1% Chrysotile Asbestos
2WTC-1273(E)	Fluffy insulation material on metal deck above ACS 7.12 N.E. lobby duct	15% Chrysotile Asbestos
2WTC-1273(I)	Same location	1% Chrysotile Asbestos
2WTC-1274(E)	Fluffy insulation material on beam above ACS 7.12 N.E. lobby duct	20% Chrysotile Asbestos
2WTC-1274(I)	Same location	1% Chrysotile Asbestos
2WTC-1275(E)	Fluffy insulation material on structural beam above ACS 7.12 N.E. lobby duct	40% Chrysotile Asbestos
2WTC-1275(I)	Same location	5% Chrysotile Asbestos

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Sample No.	Location	Result
2WTC-1276(E)	Fluffy insulation material on metal deck above ACS 7.12 N.E. lobby unit	20% Chrysotile Asbestos
2WTC-1276(I)	Same location	1% Chrysotile Asbestos
2WTC-1277	Dust and fallout material from ACS 7.12 N.E. lobby unit filters	3% Chrysotile Asbestos

As can be observed from sample numbers 2WTC-1224-1227, asbestos fallout material exists on the surface of the air duct above unit E.721. As the duct collapses and expands due to air flow, this flexing may cause the disbursal of asbestos fibers into the breathing zone. Maintenance workers when working on the ducts are also creating a possible dust hazard. Therefore, it is recommended that duct surfaces be HEPA vacuumed immediately by trained personnel utilizing respiratory and personal protection.

Of particular concern is sample number 2WTC-1277. Chrysotile asbestos was identified imbedded in the filter membrane in ACS 7.12 N.E. lobby. Based upon this finding, it is highly recommended that all fan units and surrounding areas be HEPA vacuumed, the filters be changed to a high efficiency particulate filter, and the area be visually checked on a routine basis for signs of insulation disrepair.

If you have any questions please call me at PATHside 201-963-7476.

Harry R. Pool, Jr., Supervisor
Environmental Programs
Inspection and Safety Division

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